PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION See Form PCT/IPEA/416	
116863		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/SE2003/001584	13-10-2003	

International Patent Classification (IPC) or national classification and IPC

See Supplemental Box

Applicant

Telefonaktiebolaget LM Ericsson (publ) et al

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of __6__ sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☐ *(sent to the applicant and to the International Bureau)* a total of _____ sheets, as follows:

      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) _____ , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

   ☒ Box No. I   .   Basis of the report

   ☐ Box No. II   Priority

   ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   ☐ Box No. IV   Lack of unity of invention

   ☒ Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   ☐ Box No. VI   Certain documents cited

   ☐ Box No. VII   Certain defects in the international application

   ☐ Box No. VIII   Certain observations on the international application

Date of submission of the demand	Date of completion of this report
02-05-2005	18-01-2006
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Anders Edlund/MN Telephone No. +46 8 782 25 00

Form PCT/IPEA/409 (cover sheet) (April 2005)

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Cover sheet

INTERNATIONAL PATENT CLASSIFICATION (IPC):

H04L *12/28* (2006.01)
H04J *3/16* (2006.01)
H04L *12/46* (2006.01)
H04L *29/06* (2006.01)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY	International application No.
	PCT/SE2003/001584

Box No. I	Basis of the report

1. With regard to the language, this report is based on:

   ☐ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ ,
   which is the language of a translation furnished for the purposes of:

       ☐ international search (Rules 12.3(a) and 23.1(b))

       ☐ publication of the international application (Rule 12.4(a))

       ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

   ☒ the international application as originally filed/furnished

   ☐ the description:

       pages _____ as originally filed/furnished

       pages* _____ received by this Authority on _____

       pages* _____ received by this Authority on _____

   ☐ the claims:

       pages _____ as originally filed/furnished

       pages* _____ as amended (together with any statement) under Article 19

       pages* _____ received by this Authority on _____

       pages* _____ received by this Authority on _____

   ☐ the drawings:

       pages _____ as originally filed/furnished

       pages* _____ received by this Authority on _____

       pages* _____ received by this Authority on _____

   ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

       ☐ the description, pages _____

       ☐ the claims, Nos. _____

       ☐ the drawings, sheets/figs _____

       ☐ the sequence listing *(specify)*: _____

       ☐ any table(s) related to the sequence listing *(specify)*: _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

       ☐ the description, pages _____

       ☐ the claims, Nos. _____

       ☐ the drawings, sheets/figs _____

       ☐ the sequence listing *(specify)*: _____

       ☐ any table(s) related to the sequence listing *(specify)*: _____

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

Form PCT/IPEA/409 (Box No. I) (April 2005)

Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-9	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-9	NO
Industrial applicability (IA)	Claims	1-9	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The object of the invention is to provide a system and a method for the transmission of Ethernet frames between a first and a second LAN (Local Area Network) which is situated at different geographical sites, which method and system afford a relatively low degree of complexity and cost as compared to present day solutions.
This is done by first mapping Ethernet frames onto Plesiochronous Digital Hierarchy (PDH) network via the Generic Framing Procedure (GFP) before transmitting the frames to a Synchronous Digital Hierarchy (SDH)-level network.

Reference is made to the following documents:

D1: WO03050986, A1
D2: EP 1339198, A1

Document D2 is considered to represent the closest prior art. D2 Discloses a method and device for handling Ethernet frame signals in a SDH/SONET network, the SDH/SONET network comprising network elements or nodes and fibre connections connecting the network elements, the method being characterized by the step of defining a new layer/network over the SDH/SONET network in order to manage the Ethernet signals over the SDH/SONET network, the new layer/network using the resources of SDH/SONET network in such a way as to optimize the provided services and the performances with reference to this specific type of transport. The step of defining a new layer/network comprises the steps of: defining at least two Ethernet Access Points, namely Ethernet interfaces at the SDH/SONET network boundary where the Ethernet signals can

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

access/leave the SDH/SONET network; defining a Link as a pair of Ethernet Access Points providing a point-to-point connection; for any pair of Ethernet Access Points, defining corresponding Circuits, namely all the possible routes connecting the pair of Access Points through the SDH/SONET network; and dividing each Circuit into Pipes, namely a sequence of smaller segments (abstract; paragraph [0033]-[0047]; and claims 1-12).

Independent claims 1 and 5:

The invention according to independent claims 1 and 5 differs from D2 by the step of mapping Ethernet frames from the first local area network onto PDH network via GFP, which is not clearly mentioned in D2.

Mentioned in the application that "PDH is often used as an intermediate level between Ethernet LAN:s and the SDH-level or SONET, due to the fact that, in most cases, the distance that Ethernet allows data to be transported makes it unfeasible to connect the Ethernet directly to the SDH or SONET-level, and also to the limited penetration of SDH/SONET networks".

Also, D1 describes a system of mapping PDH onto SONET/SDH.

Mentioned in D2 that in order to improve the interfacing between Ethernet and SDH/SONET, and for better supporting all the functionalities that have been selected, it has been decided to insert a further level of data encapsulation. The protocol used for this intermediate level is GFP (Generic Frame Procedure). This technique has been selected because GFP packet has been properly defined for allowing the mapping of generic data in transport frames having variable-length payload and based on octet alignment, such as SDH/SONET and OTN (Optical Transport Network).

It is therefore considered obvious to a person skilled in the art to map Ethernet frames onto PDH via GFP before sending them on a SDH/SONET network.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

Dependent claims 2-4 and 6-9:

The remaining claims are considered to involve particular detail executions obvious to a person skilled in the art. Therefore, the invention according to these claims is not considered to involve an inventive step, with reference to D2.

Consequently, the invention according to claims 1-9 is novel and industrial applicable. The invention according to these claims is not considered to involve an inventive step.